Forces Practice Problems
Honors Physics

1. A car (mass = 1250 kg) accelerates at 1.62 m/s/s to the right. If the drag force on the car is 490 N and the applied force is 3650 N, what is the coefficient of friction between the tires and the road? [0.092]
2. A box (mass = 40 kg) is pulled at an angle of 39° with a force of 175 N. If the coefficient of friction between the box and floor is 0.298, what is the acceleration of the box? [1.3 m/s/s]
3. A block of mass 22 kg is on a horizontal surface and is attached to a block of mass 8 kg that is hanging by means of a rope passed over a pulley. Find the acceleration of the mass on the table. [2.61 m/s/s]
4. A block of mass 4 kg is on a horizontal surface and is attached to a block of mass 13 kg that is hanging by means of a rope passed over a pulley. Find the acceleration of the mass that is hanging. [7.49 m/s/s]
5. Two masses are hanging by a rope passed over a pulley. The mass on the left is 17 kg, and the mass on the right is 19 kg. What is the acceleration (direction and magnitude) of the block on the left? [up; 0.544 m/s/s]
6. Two masses are hanging by a rope passed over a pulley. The mass on the left is 26.5 kg, and the mass on the right is 19 kg. What is the acceleration (direction and magnitude) of the block on the left? [down; 1.62 m/s/s]